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10/542,917	07/21/2005	Hidegori Okuzaki	275451US0PCT	5730
22850 7590 01/07/2010 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER NGUYEN, VU ANH				
ART UNIT 1796		PAPER NUMBER		
NOTIFICATION DATE 01/07/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

## Application No.

10/542,917

## Applicant(s)

OKUZAKI ET AL.

## Examiner

Vu Nguyen

## Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 25-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 25-33 and 35 is/are rejected.
- 7) ☒ Claim(s) 3, 5, 7 and 34 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ ~~Notes of Informal Patent Application~~
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/2009 has been entered.

### ***Response to Amendment***

2. Acknowledgement is made of the amendment to the specification and the claims. Claim 1 has been amended; claims 6 and 8-24 have been cancelled; and new claims 25-35 have been added. Claims 1-5, 7 and 25-35 are pending.

### ***Specification***

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. The disclosure is objected to because of the following informalities: Due probably to translation, the specification contains numerous grammatical issues that need either

corrections or touchups. For instance, the term sucrose is mis-spelled as "scroll" in line 13 of page 26. Other examples include the awkward phrase "atmospheric atmosphere" in line 24 of page 10 and line 11 of page 37, and the phrase "atmospheric atom" in line 21 of page 22.

Appropriate correction is required.

### ***Claim Objections***

5. Claim 35 is objected to because of the following informalities: the term polyhydric is mis-spelled. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 25-35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 25 recites the negative limitation "wherein the alcohol is not polymeric polyhydric alcohol". The cited phraseology clearly signifies a "negative" or "exclusionary" limitation for which the applicants have no support in the original disclosure. Negative limitations in a claim which do not appear in

the specification as filed introduce new concepts and violate the description requirement of 35 USC 112, first paragraph, *Ex Parte Grasselli, Suresh, and Miller*, 231 USPQ 393, 394 (Bd. Pat. App. and Inter. 1983); 783 F. 2d 453. (See *Response to Arguments below for further explanations*).

***Claim Rejections - 35 USC § 102/103***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takashima et al. (Sensors and Actuators B 89 (2003), 48-52).

11. Corresponding to the limitations set forth in these claims, Takashima et al. discloses a free-standing film comprising polypyrrole and dodecylbenzenesulfonic acid (Experiment). The film is immersed in a 1 M NaCl solution.

12. Clearly, the film has all the elements set forth in these claims but the prior art fails to disclose whether or not the film is in the form of a gel and, if so, a water content in the

gel. However, unless shown otherwise, there is a reasonable basis to believe that the disclosed film, after being immersed in the electrolyte solution, is in the form of a gel containing an amount of water within the claimed range because (1) the composition of the film is substantially identical to the composition of the claimed gel, (2) the immersion of the film in the electrolyte solution is expected to enable the formation of ion-mediated cross-linked swelling-in-water structure (i.e., gel formation), and (3) the large-magnitude reversible electrochemomechanical deformability of the film implies its ion-exchangeable water-containing gel-like structure. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to show otherwise. See MPEP § 2112 (I-V).

13. Claims 25-33 and 35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jonas et al. (US 6,083,635).

8. Corresponding to the limitations set forth in these claims, Jonas et al. (Jonas, hereafter) discloses a composition that is used to form a film on a substrate (col. 4, lines 6-8), said composition comprising, in one particular embodiment, water as the main component, a polythiophene doped with polystyrenesulfonic acid, a mixture of isopropanol and sorbitol, 3-glycidoxypropyltrimethoxysilane, and is treated with an anion-exchange resin and a cation-exchange resin (col. 5, lines 25-52). Besides isopropanol and sorbitol, other equivalent alcohols can be used and they include ethanol, glucose, fructose, ethylene glycol, glycerin and others (col. 2, lines 28-38). The

composition clearly contains an electrolyte due to the sodium ions from the cation-exchange resin, which is Lewatit S 100 from Bayer AG.

9. Clearly, the prior art composition has all the elements set forth in these claims except for the followings: (1) the prior art fails to teach whether the composition forms a gel, and, if a gel is formed, (2) an amount of water in the gel. However, unless shown otherwise, there is a reasonable basis to believe that the prior art does include films which are gels having a water content of 66-98 wt% due to the following observations. The prior art film that is deemed to correspond to the presently claimed gel is the film formed of the disclosed composition on a substrate and is dried in air (but before any heating or curing step) (col. 5, line 47). Such film is inherently or obviously in the form of a gel because its composition is substantially identical to the claimed gel composition, including the conductive conjugated polymer, the dopant, and the alcoholic solvents. Further, the presence of sodium ions enables the formation of a cross-linked structure (i.e., gel formation) of the PSS-doped PEDOT. Moreover, the process of drying in air corresponds to the method of gel formation by aging at ambient condition being done in the instant application. For the same reasons, said film is inherently or obviously expected to contain a water content within the claimed range. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to the applicant to show otherwise. See MPEP § 2112 (I-V).

***Allowable Subject Matter***

10. Claims 3, 5, 7 and 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

11. Applicant's arguments set forth in the Remarks filed 12/15/2009 have been fully considered. Regarding applicant's allegation that the newly added negative limitation in claim 1 does not institute new matter because the term used in the specification is "polymer-like polyhydric alcohols" and not polymeric polyhydric alcohols, the argument is not persuasive because the original disclosure defines "polymer-like polyhydric alcohols" with examples "such as polyethylene glycol and polyvinyl alcohol" (p. 26). In fact, in preferred embodiments, polyethylene glycol having a MW of 1000 is used (p. 26). In short, polyethylene glycol and polyvinyl alcohol are polymeric polyhydric alcohols, and the newly added negative limitation does not have support from the original disclosure. Applicant's arguments with respect to the rejection of claims 1-5 and 7 over Inganas are moot in view of the new grounds of rejection based on newly found prior art references as discussed above.



***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vu Nguyen whose telephone number is (571)270-5454. The examiner can normally be reached on M-F 7:30-5:00 (Alternating Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 571-272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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